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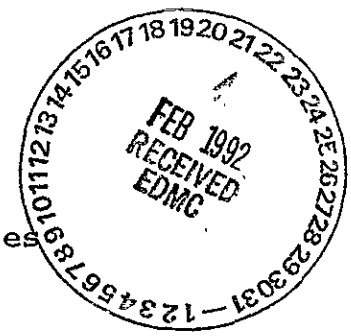
WASHINGTON STATE DEPARTMENT OF ECOLOGY
ENVIRONMENTAL INVESTIGATIONS AND LABORATORY SERVICES
MANCHESTER ENVIRONMENTAL LABORATORY

November 26, 1991



TO: Joe Witczak

FROM: Craig Smith, Manchester

SUBJECT: Quality Assurance Memo for 183-H Basins Samples

SAMPLE RECEIPT

The samples from the 183-H project were received by Manchester Laboratory on 10/23/91 in good condition.

HOLDING TIMES

All analyses were performed within the specified holding times.

INSTRUMENT CALIBRATION

Calibration was checked before the analytical run with initial verification standards and blanks. Continuing calibration was verified during the sample run with standards run at the frequency of 20%. Calibration standards were also analyzed at the end of the analytical run. A correlation coefficient of greater that 0.999 was obtained for each analyte. A correlation coefficient of 0.995 or higher means that the calibration is acceptable.

PROCEDURAL BLANKS

The procedural blanks associated with these samples showed no analytically significant levels of analytes except for SO4. A blank correction of 20mg/kg was necessary for SO4.

SPIKED SAMPLE ANALYSIS

Spiked sample analysis were performed for each parameter. All spike recoveries were within acceptable limits (70 - 130%).

PRECISION DATA

The results of the spiked and duplicate samples were used to evaluate analytical precision as related to the sample set. The % RPD for all parameters was within the +/- acceptance criteria for duplicate analysis.

9 2 1 2 5 3 1 3 9 8

STANDARD REFERENCE MATERIAL

The analysis of standard reference materials were all within the acceptable criterion established for each parameter.

SUMMARY

The data for this project may be used without further qualification.

It should be noted that the SO4 data had a method reporting limit (MRL) of 40mg/Kg. Two of the samples had values above the detection limit, but below the MRL:

438043	7.0 mg/Kg
438044	2.0 mg/Kg

If you have any questions concerning the results, please feel free to call me at SCAN 744-4737.

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: WA State Dept. of Ecology Date: November 20, 1991

Report On: Analysis of Soil Lab No.: 21005

IDENTIFICATION:
Samples received on 11-01-91
Project: K3362 1836-H Basins

ANALYSIS:

Lab Sample No.	1	2	3	4
Client ID	438040	438041	438042	438043
Units	mg/kg	mg/kg	mg/kg	mg/kg
Nitrate Nitrogen	0.7	0.8	0.4	0.5
Sulfate	< 40	< 40	< 40	< 40
pH	8.4	8.9	8.8	8.9

Lab Sample No.	5	6	7
Client ID	438044	438045	438046
Units	mg/kg	mg/kg	mg/kg
Nitrate Nitrogen	9.0	1.1	~~< 0.2~~ 2.0
Sulfate	< 40	< 40	< 40
pH	8.8	8.8	8.3

SOUND ANALYTICAL SERVICES

THOMAS BOYDEN

SOUND ANALYTICAL SERVICES, INC.

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4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206) 922-2310 - FAX (206) 922-5047

QUALITY CONTROL REPORT

Client: WA State Dept. of Ecology
Project: K3362 1836-H Basins
Lab No: 21005
Date: November 20, 1991

MATRIX SPIKES

Parameter	Lab Sample Number	Sample Result (SR)	Spiked Sample Result (SSR)	Spike Added (SA)	%R
Nitrate + Nitrite	21005-1	0.7	5.47	5.0	95
Nitrite	21005-1	< 0.2	5.01	5.0	100
Sulfate	21005-1	< 40	960	1,000	96

%R = Percent Recovery = (SSR) - (SR) / (SA) x 100

DUPLICATES

Parameter	Lab Sample Number	Sample Result (S)	Duplicate Sample Result (D)	RPD
Nitrate + Nitrite	21005-1	0.73	0.66	10.1
Nitrite	21005-1	< 0.2	< 0.2	0.0
pH	21005-7	8.3	8.5	2.4
Sulfate	21005-1	< 40	< 40	0.0

RPD = Relative Percent Difference
= [(S - D) / ((S + D) / 2)] x 100

SOUND ANALYTICAL SERVICES, INC.

Client: WA State Dept. of Ecology
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Q.C. CHECK SAMPLES

PARAMETER	TRUE VALUE(TV)	RESULT(R)	%D
Nitrate + Nitrite	8.3	8.7	4.8
Sulfate	49.4	44.5	10.4

%D = % Difference
= (TV - R) / TV x 100
Check samples are Setpoint Standards from Analytical Products Group.

METHOD BLANKS

PARAMETER	RESULT
Nitrate + Nitrite	0.001
Nitrite	0.006
Sulfate	1.7

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QUALITY CONTROL REPORT

DISCUSSION

Client: WA State Dept. of Ecology
Project: K3362 1836-H Basins
Lab No. 21005
Date: November 20, 1991

Nitrate + Nitrite: Analysis was performed per Alpkem Method A303-S170-02 on acidified samples. No dilutions were required to bring values into the analytical range of the cartridge (0.02 - 1.0 mg/l).

Sulfate: Analysis was performed per Alpkem Method A303-S031. No dilutions were required to bring values into the analytical range of the cartridge (4.0 - 200 mg/l).

All Quality Control was within acceptable guidelines.